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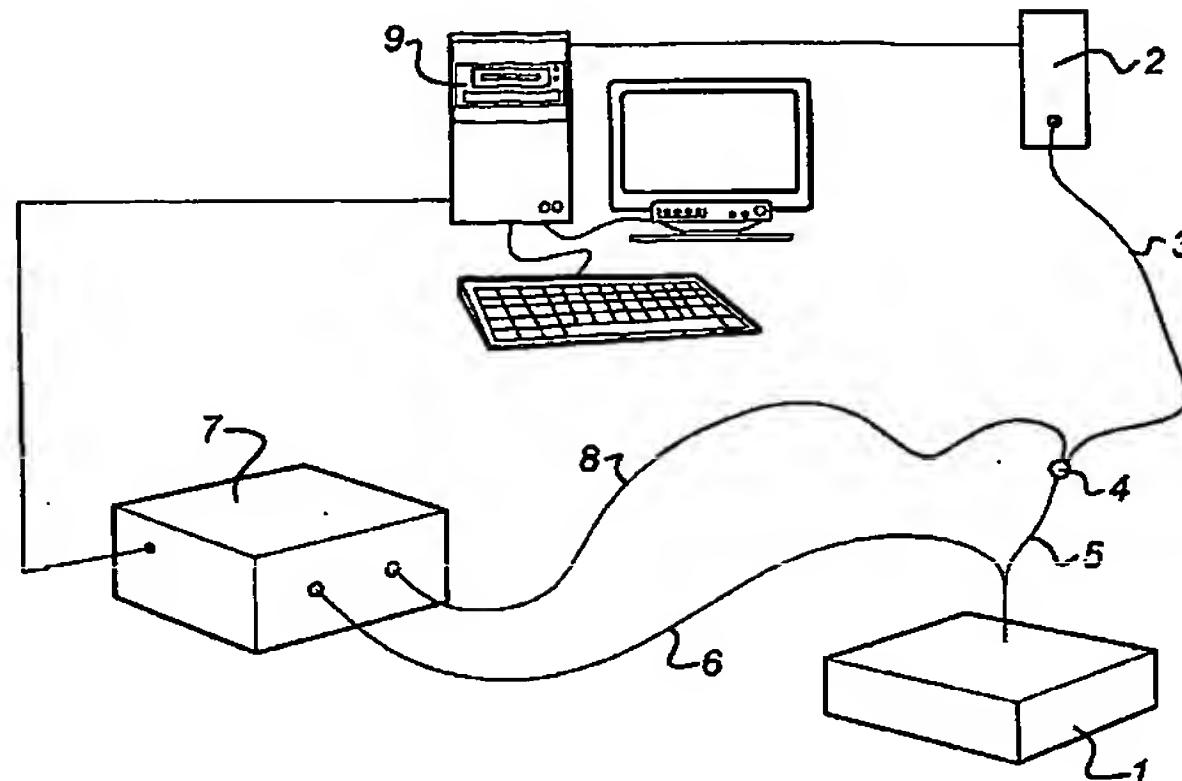
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(54) Title: **METHOD AND DEVICE FOR BACKSCATTER SPECTROSCOPY**



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(57) **Abstract:** A method and a device for determining a physical property of a medium, such as a concentration of a substance in the medium are disclosed. The device comprises a light source (2), a probe with at least a first and a second optical fiber (5, 6) positioned alongside each other, said first optical fiber (5) being arranged to deliver radiation from the light source to a sample (1) and to collect first backscattered radiation from said sample, said second optical fiber (6) being arranged to collect second backscattered radiation, a spectrometer (7) for producing first and second backscattered radiation, a spectrometer (7) for producing first and second signals based on said first and second backscattered radiation, and a processor (9) adapted to determine a differential backscatter signal from said first and second signals and to calculate said physical property by curve fitting said measured differential backscatter signal to a backscatter function. Depending on whether the diameter of the optical fibers is smaller or greater than the mean free path of photons in the sample different backscatter functions are used.



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